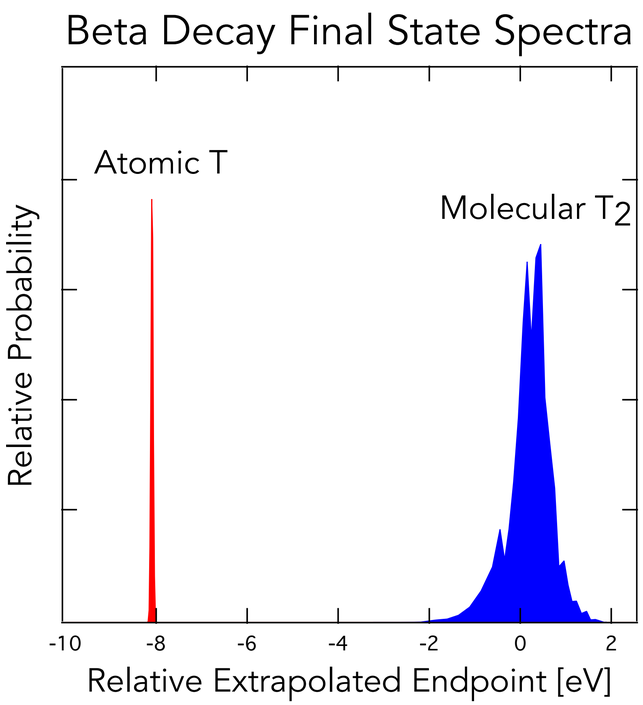
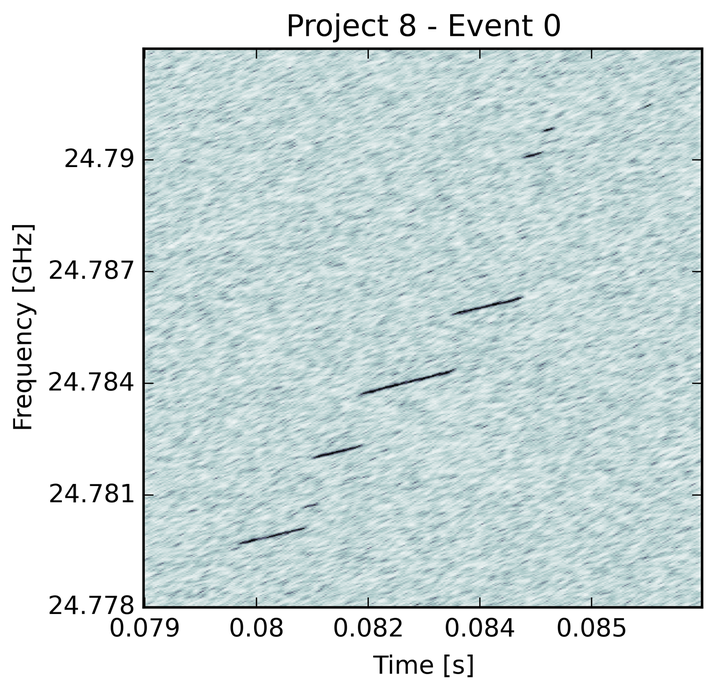
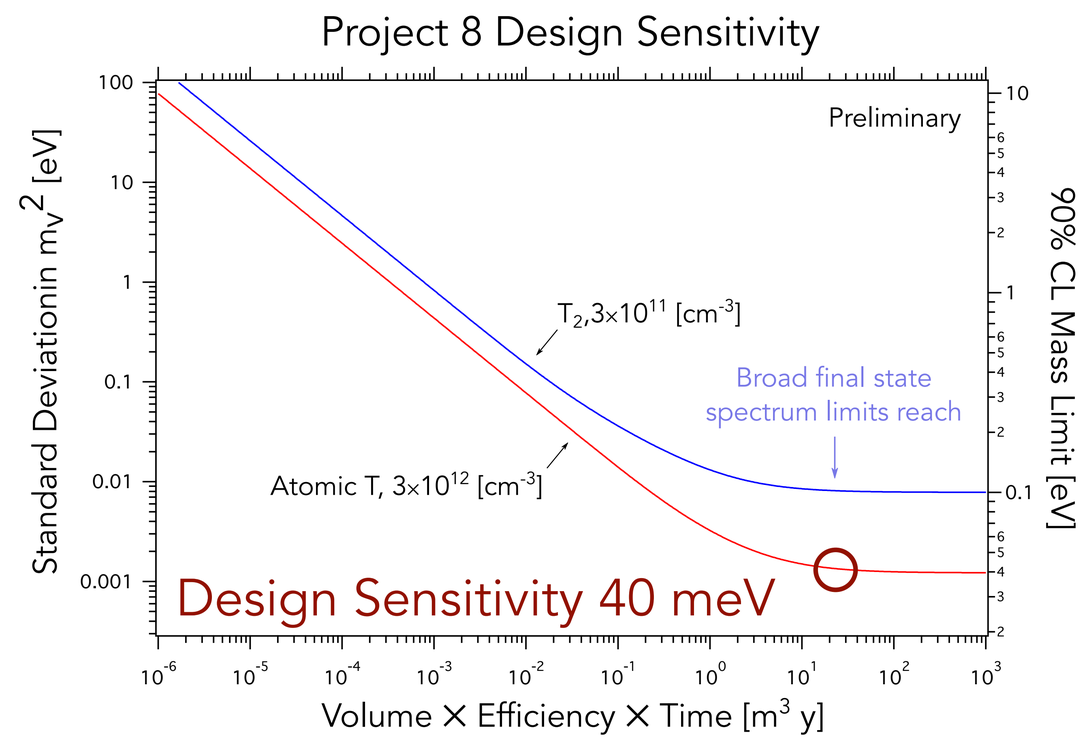
Atomic Tritium and Phase IV of Project 8

Alec Lindman for the Project 8 Collaboration

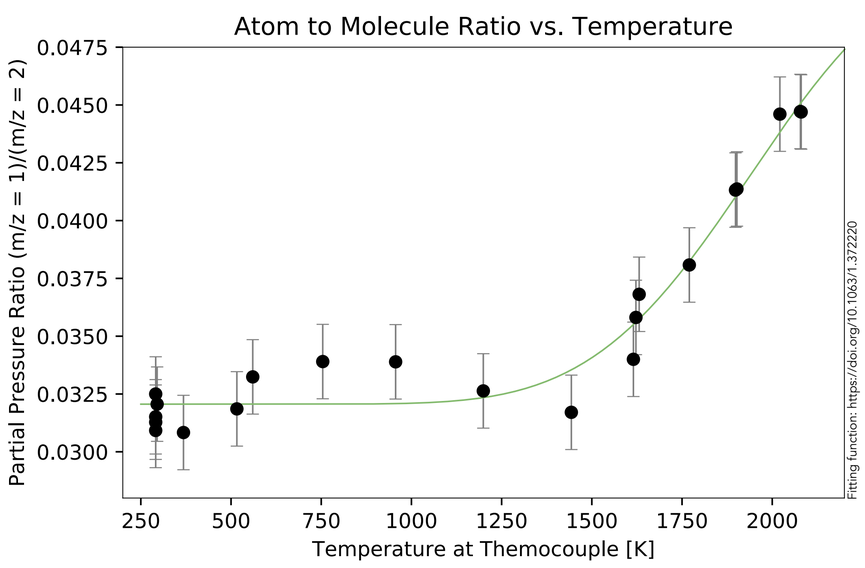


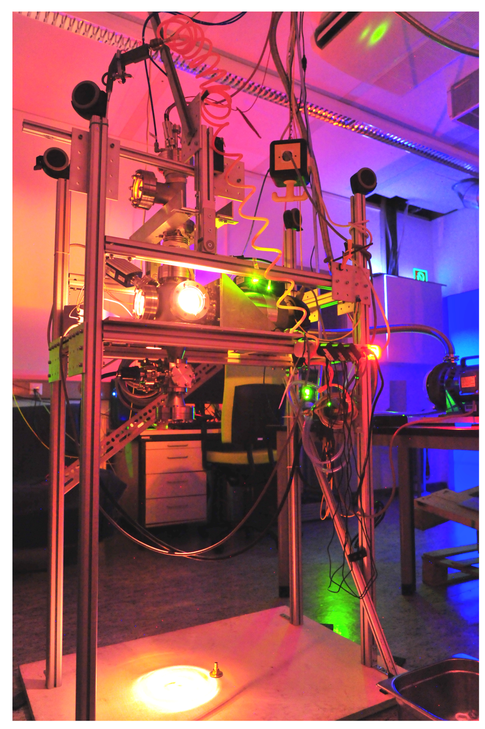




Mainz Cracker Test Stand

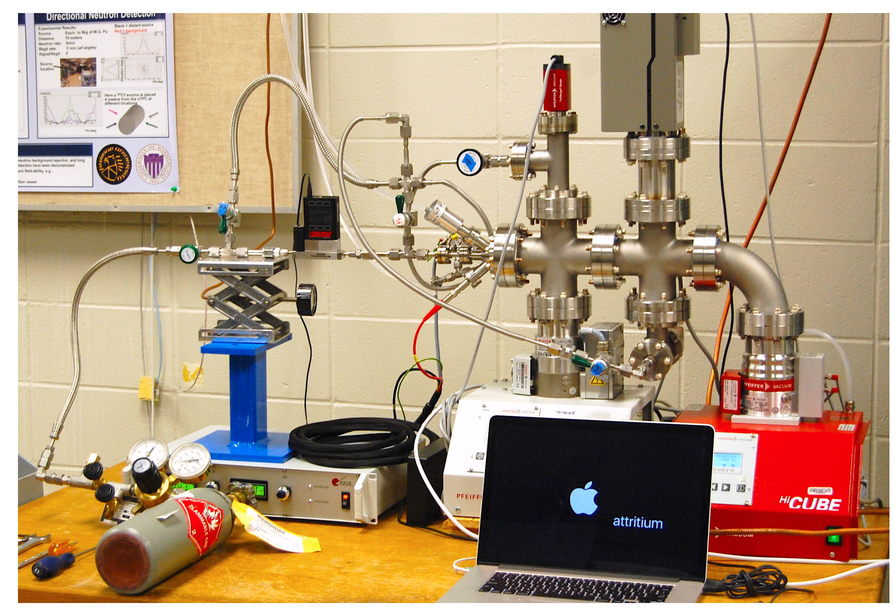
Successfully produced first atomic hydrogen





LLNL Cracker Test Stand

Currently running with deuterium



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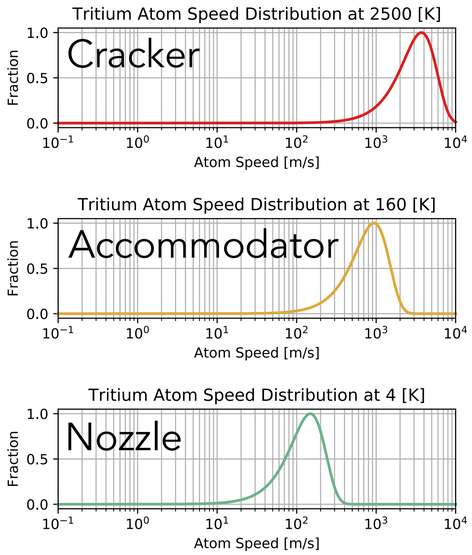
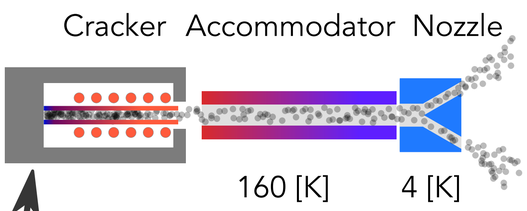
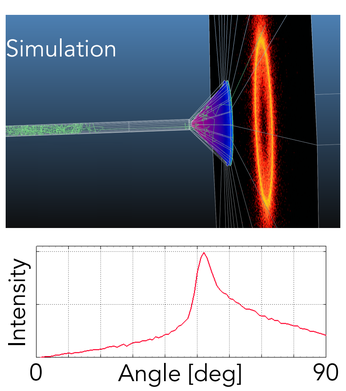


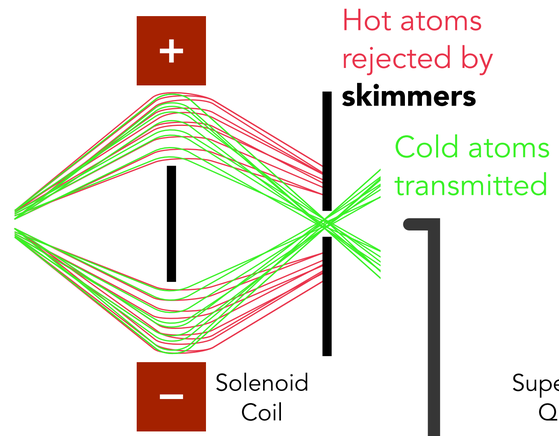




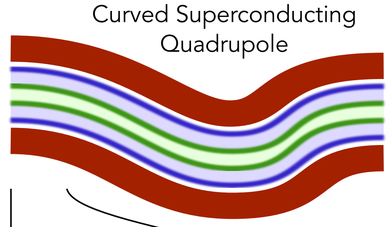
Molecular tritium supply

Differential pumping, tritium purification, and recirculation

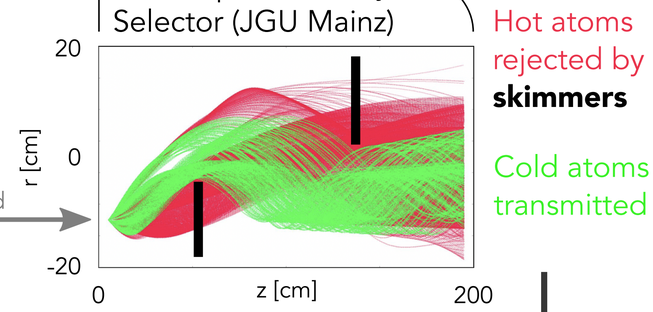
Magnetic Thin Lens Velocity Selector (Univ. of Washington)

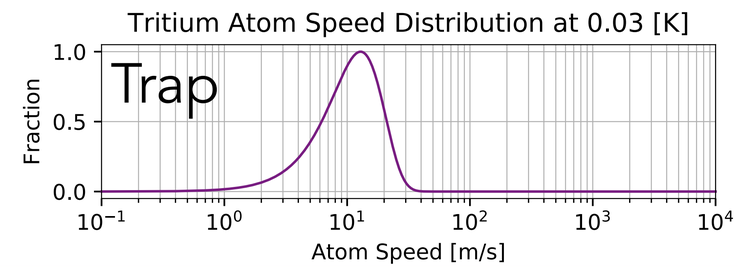


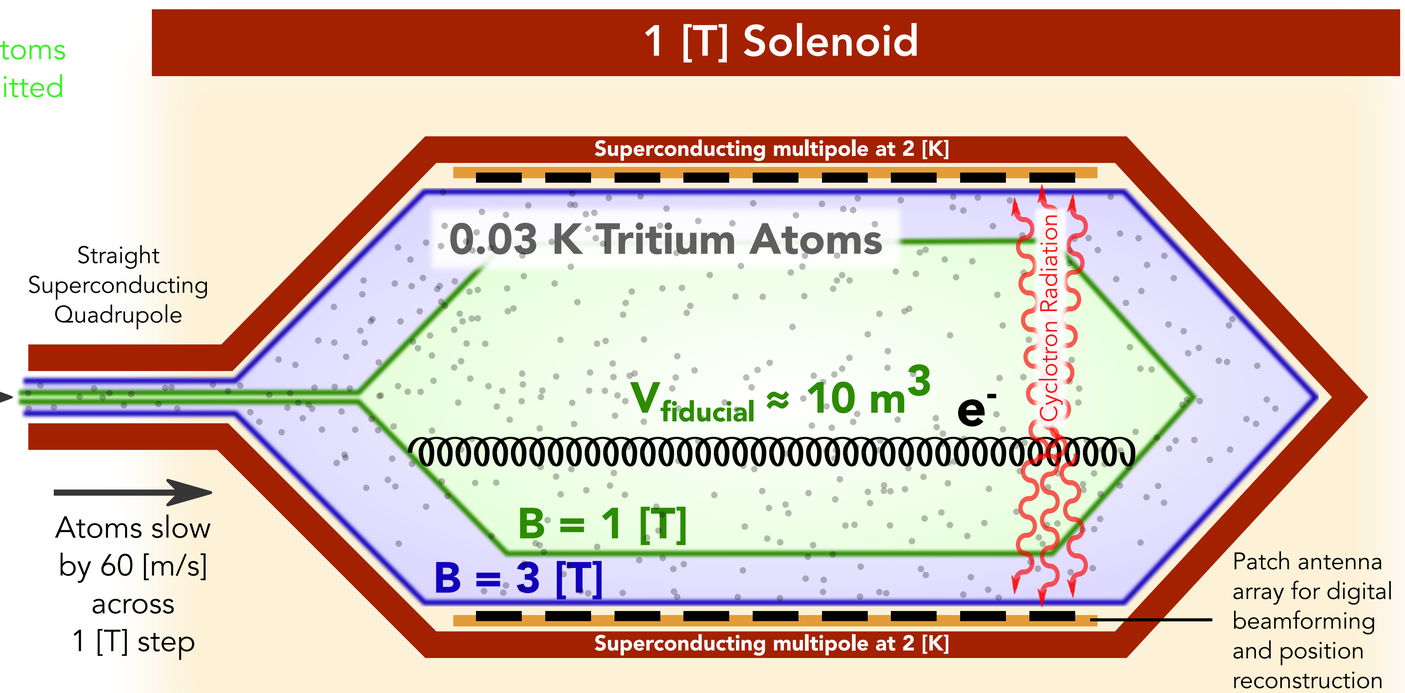
Curved Superconducting Quadrupole

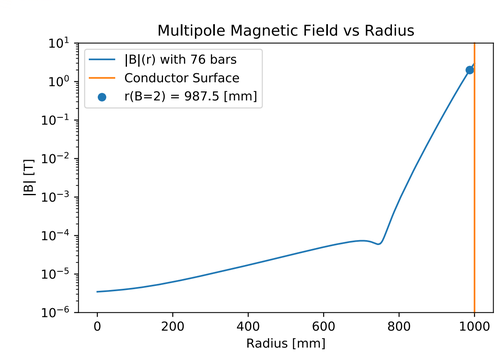


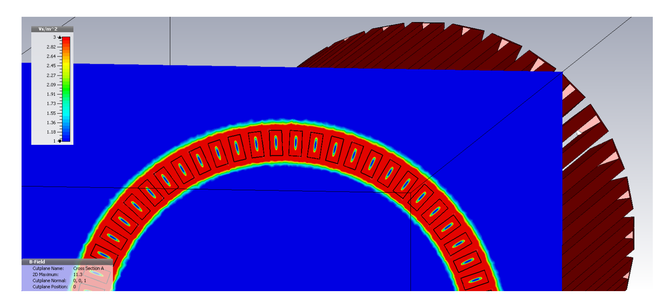
Magnetic Quadrupole Velocity Selector (JGU Mainz)











We have determined the requirements for Phase IV of Project 8, the first direct neutrino mass experiment with atomic tritium, and identified solutions for each requirement. The path is clear to a neutrino mass sensitivity of 40 **meV!**